

**MULTIPLE PERSPECTIVES FRAMEWORK TO MODEL
COMPLEX SYSTEMS**

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I dedicate this thesis to my parents,

Bong Jae and Ok Hee Yoo

for their unconditional love,

for always believing in me and

for never letting me fall.

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I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

.....

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ABSTRACT

The growing complexity of organisations has resulted in collaboration between multiple stakeholders becoming a demanding and critical issue, which organisations must then manage in order to ensure their systems are sustainable. The challenge is to tackle the complex issues facing contemporary organisations and their stakeholders. There is a necessity to settle upon a modelling method that can be used to analyse change management and to improve its adaptation. This study addresses the area of Information Systems (IS) design, in which it is difficult to identify new characteristics of systems in complex environments. Thus the system design framework is recognised prior to modelling a complex system at various points in the organisation's development and in managing system evolution. However, the framework would not succeed without a full understanding of the significant changes occurring across organisations. The use of a multiple perspective framework to improve understanding of the complex relationships affecting such systems has been examined. A multiple case field study was conducted in order to demonstrate the suitability of the proposed methodology, and effect the analysis and examination for knowledge-based systems in an actual organisational setting. The results have suggested that the use of a multi-perspective framework is appropriate and that there is a need for attention to be paid to the economic perspective.

Keywords: Complex Systems, System Design, Organisational Complexity, Organisational sustainability, Visualisation.

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